DUAL-DAMASCENE DIELECTRIC STRUCTURES AND METHODS FOR MAKING THE SAME

ABSTRACT OF THE DISCLOSURE

A dielectric structure and method for making a dielectric structure for dual-damascene applications over a substrate are provided. The method includes forming a barrier layer over the substrate, forming an inorganic dielectric layer over the barrier layer, and forming a low dielectric constant layer over the inorganic dielectric layer. In this preferred example, the method also includes forming a trench in the low dielectric constant layer using a first etch chemistry, and forming a via in the inorganic dielectric layer using a second etch chemistry, such that the via is within the trench. In another specific example, the inorganic dielectric layer can be an un-doped TEOS oxide or a fluorine doped oxide, and the low dielectric constant layer can be a carbon doped oxide (C-oxide) or other low K dielectrics.